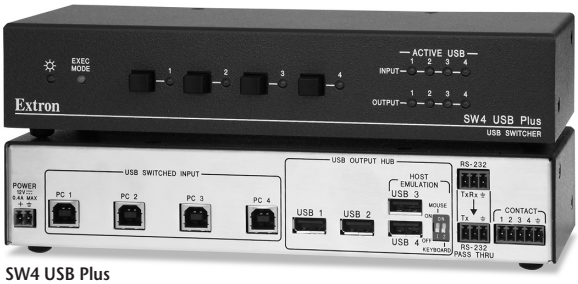
SW USB Series

TWO AND FOUR INPUT USB SWITCHERS

- USB 2.0 compatible
- Four port output hub
- Port Status LEDs
- RS-232 and contact closure remote control
- RS-232 pass-through
- Front panel security lockout
- Host and Peripheral Emulation Mode - SW4 USB Plus model
- Rack-mountable 1U high metal enclosure

SW2 USB



SW4 USB Plus

The Extron SW2 USB and SW4 USB are two- and four- input USB switchers that allow switching between multiple host devices and multiple USB peripherals. Integration-oriented features include: port status indication, RS-232 pass-through, front panel security lockout, and multiple control points. The SW USB Series is ideal for applications such as KVM, interactive whiteboard, and annotator-based applications in education, judicial, or corporate settings, or wherever reliable, multi-I/O USB switching is needed.

DESCRIPTION

The **SW USB** Series are two- and four-input USB switchers that provide integrator-friendly solutions for implementing USB 2.0 compatible switching in today's A/V environments. A number of specialized features help further streamline integration, such as: port status indication, RS-232 pass-through, front panel security lockout, and multiple control points.

All of the SW USB Series switchers act as active USB hubs, supplying 5V, 500mA to attached devices, per USB specification. In addition, the switchers are USB 2.0 compatible, and are backwardly-compatible with all previous USB data rate specifications, including low speed 1.5 Mbps, full speed 12 Mbps, and hi-speed 480 Mbps.

RS-232 pass-through reduces RS-232 control port requirements by processing SIS commands within the SW USB while also passing them through to other controllable Extron audio and video switchers.

The SW4 USB Plus model features Host and Peripheral Emulation Mode, which provides "keep alive" functionality by continuously mimicking host and keyboard/mouse device communications within the switcher. This emulation eliminates the need for enumeration, and reduces the chance of failed device communications throughout the switching process.

The SW USB Series incorporates rack mountable, 1U, half-rack width enclosures for simplified integration. All models include an external, universal power supply for worldwide power compatibility.

FEATURES

- **USB 2.0 compatible** – Supports 480 Mbps high speed communications and is backwards compatible with all prior USB versions.
- **Four port output hub** –Allows simultaneous connection to multiple peripheral devices such as mass storage devices, keyboards, mice, or other HID – Human Interface Devices. Attached devices can be powered via the 5V, 500mA current provided on each output.
- **Port Status LEDs** – Provides visual indication of port activity for enumerated peripherals and all connected and active host devices.
- **Multiple control points** – Operation via front panel, RS-232, and contact closure offers integration flexibility into a variety of control environments.
- **RS-232 pass-through** – Reduces RS-232 control port requirements by processing SIS commands within the SW USB while also passing them through to other controllable Extron video switchers.
- **Front panel security lockout** – Prevents unauthorized use in non-secure environments. In lockout mode, a special button combination is required to operate the switcher from the front panel controller.
- **Host and Peripheral Emulation Mode** – SW4 USB Plus model – Offers increased system reliability by emulating uninterrupted connection between host and keyboard/mouse devices. This selectable feature enables devices to "keep alive" when switching between inputs.
- **Rack-mountable 1U, half rack width metal enclosure**
- **External universal power supply included**

SW USB with Interactive Whiteboards

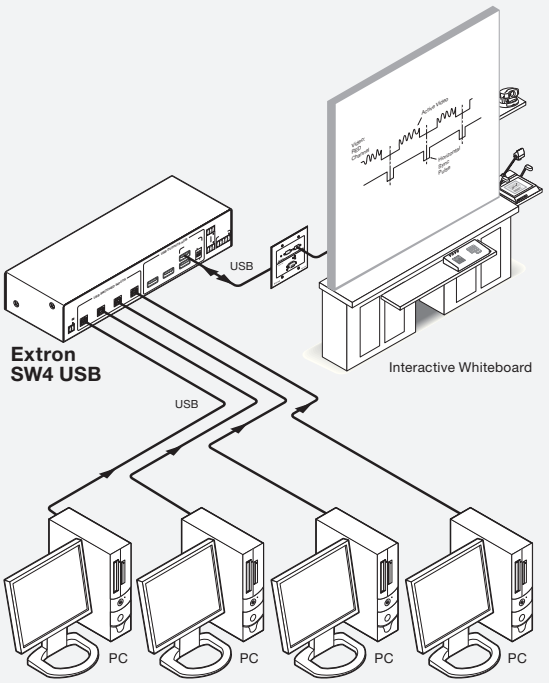
Extron's SW USB switchers are well suited for implementation in interactive whiteboard applications for both corporate and education environments. These popular applications will benefit from the high number of integrator-friendly features, offering streamlined design capabilities and increased reliability.

Simplified operation and control

- Variety of control locations offers flexibility and convenience – Front panel and contact closure for operation in the most basic systems and full RS-232 integration through MediaLink, IP Link, or other third party control systems.
- RS-232 pass-through offers increased flexibility, allowing other Extron controllable switchers to be incorporated into designs that require additional signal switching.

System reliability

- Host and peripheral emulation in the SW4 USB Plus provides "keep alive" functionality by continuously mimicking host and keyboard/mouse device communications within the switcher. This emulation eliminates the need for enumeration, and reduces the chance of failed device communications throughout the switching process.
- Port Status LEDs provide real-time visual indication of connectivity and operational state of attached hosts and peripherals



USB TERMINOLOGY

USB – Universal Serial Bus – A popular serial bus interface standard that allows communication between a host and one, or many, peripheral devices. USB 1.0 was introduced in 1995, and the current version, 2.0, was released in 2000.

Host – A device, usually a computer, that initiates communications transfer with attached downstream devices/peripherals. Hosts utilize Type A connectors.

Peripheral – Downstream devices, such as keyboards, mice, and other interfaces that communicate with the attached host. Multiple peripherals can be actively connected within a system with simultaneous communication taking place. Peripheral devices typically utilize Type B connectors.

Enumeration – The discovery process in which device recognition and configuration takes place. This process is repeated each time the USB host is restarted.

Hub – Expands the number of devices to which a host can communicate. Powered or "active" hubs provide 5V power for attached peripherals.

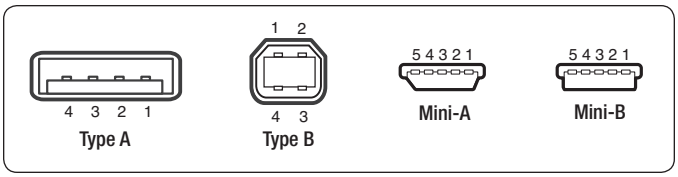
Speed/Data Rate – USB currently supports three speeds, or data rates. Low speed – 1.5 Mbps, Full Speed – 12 Mbps, and High Speed – 480 Mbps.

Device Class – Categories defined by the Device Working Group of the USB Implementers Forum that describe usage and operation. Drivers are utilized to support functionality of these classes. Two common classes are Mass Storage and HID – Human Interface Devices.

Mass Storage – Devices such as thumb drives, external hard drives, and digital cameras

HID – Human Interface Devices include keyboards, mice, joysticks, annotators, and interactive whiteboards

Connector types – Multiple connector types exist, but at the most basic levels, Type A connectors are utilized on Host devices, while Type B connectors are found on Peripherals.



SPECIFICATIONS

USB

USB specification	USB 2.0 compatible
USB data rates	Low speed (1.5 Mbps), full speed (12 Mbps), high speed (480 Mbps)

USB INPUT

Connectors	
SW2 USB	2 female USB type B
SW4 USB, SW4 USB Plus	4 female USB type B

USB OUTPUT

Connectors	4 female USB type A

CONTROL/REMOTE — SWITCHER

Serial control port	(1) RS-232, 3.5 mm captive screw connector, 3 pole (1) RS-232 pass-through, 3.5 mm captive screw connector, 3 pole
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configurations	
RS-232	1 = TX, 2 = RX, 3 = GND
RS-232 pass-through	1 = TX, 3 = GND
Contact closure	
SW2 USB	(1) 3.5 mm captive screw connector, 3 pole
SW4 USB, SW4 USB Plus	(1) 3.5 mm captive screw connector, 5 pole
Contact closure pin configuration	
SW2 USB	1 = input 1, 2 = input 2, 3 = GND
SW4 USB, SW4 USB Plus	1 = input 1, 2 = input 2, 3 = input 3, 4 = input 4, 5 = GND
Program control	Extron's Simple Instruction Set (SIS™)

GENERAL

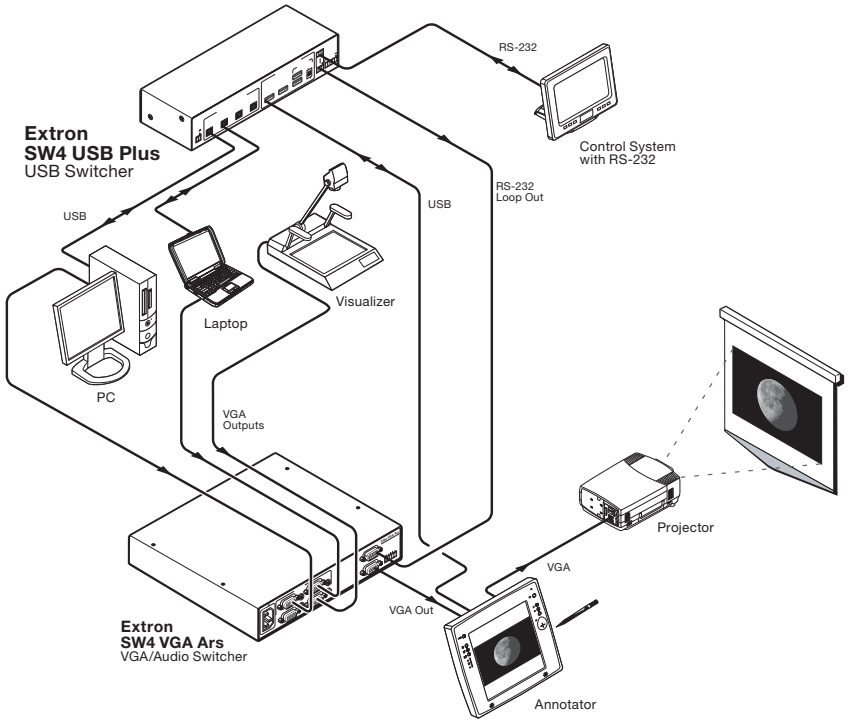
External power supply	100 VAC to 240 VAC, 50/60 Hz, external; to 12 VDC, 2 A, regulated
Power input requirements	12 VDC, 1.5 A
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, no vents
Mounting	
Rack mount	Yes, with optional 1U, 9" deep rack shelf (RSU 129, #60-190-01; RSB 129, #60-604-01); or 1U, 6" deep rack shelf (RSU ad126, #60-190-10; RSB 126, #60-604-10)
Furniture mount	Yes, with optional Under-Desk Mounting Kit
Enclosure type	Metal
Enclosure dimensions	1.6" H x 8.6" W x 6.0" D (1U high, half rack wide) (4.1 cm H x 21.8 cm W x 15.2 cm D)
Product weight	2.0 lbs (0.9 kg)
Shipping weight	3 lbs (2 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

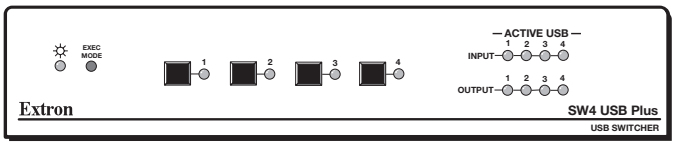
Model	Version Description	Part Number
SW2 USB	Two Input USB	60-952-01
SW4 USB	Four Input USB	60-953-01
SW4 USB Plus	Four Input USB with Emulation	60-954-01

Specifications are subject to change without notice.

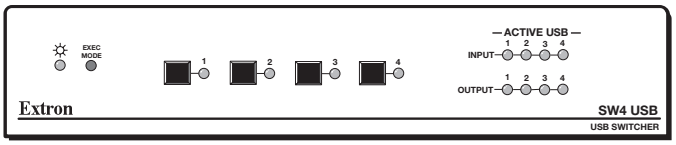
APPLICATION DIAGRAM



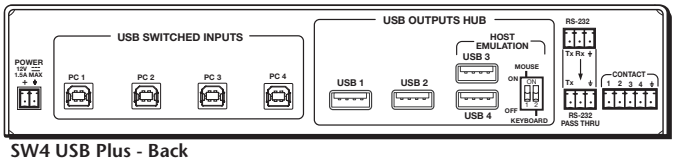
PANEL DRAWINGS



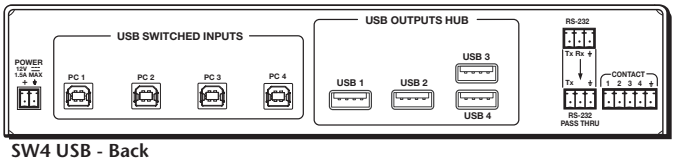
SW4 USB Plus - Front



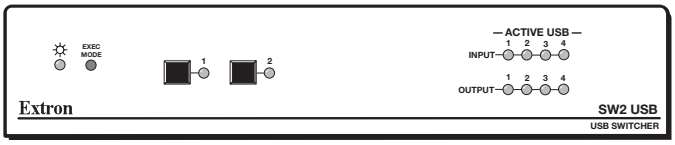
SW4 USB - Front



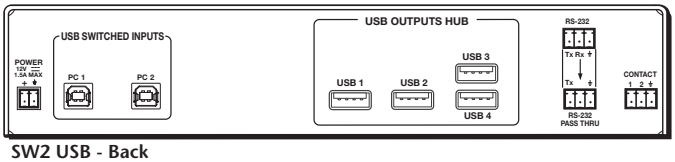
SW4 USB Plus - Back



SW4 USB - Back



SW2 USB - Front



SW2 USB - Back

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